

Patent Claims

- 5        1. Mixing and reducing machine with an upward-conveying mixing spiral that  
rotates around a vertical rotational axle,  
characterized in that,  
after the first mixing spiral (11.1 – 13.2), a second mixing spiral (14.1 – 16.2) is arranged  
in the axial direction, whereby between the mixing spirals (11.1 – 13.2; 14.1 – 16.2) a  
10      transition zone (19) extends in the axial direction.
- 15       2. Mixing and reducing machine according to claim 1,  
characterized in that,  
the transition zone (19) is free of a mixing spiral.
- 15       3. Mixing and reducing machine according to claim 1,  
characterized in that,  
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different axial conveyed quantities.
- 20       4. Mixing and reducing machine according to claim 3,  
characterized in that,  
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different helix angles.
- 25       5. Mixing and reducing machine according to claim 3,  
characterized in that,  
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different spiral blade widths.
- 30       6. Mixing and reducing machine according to claim 3,  
characterized in that,  
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different rotational speeds.
- 35       7. Mixing and reducing machine according to claim 1,  
characterized in that,  
the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different rotational directions.
- 40       8. Mixing and reducing machine, in particular according to the generic concept of claim  
1,  
characterized in that,  
the spiral is interrupted in the circumferential direction and is comprised of mixing blades  
(11.1, 12.1, 13.1, 11.2, 12.2, 13.2; 14.1, 15.1, 16.1, 14.2, 15.2, 16.2) connected one after  
the other.
- 45       9. Mixing and reducing machine according to claim 8,  
characterized in that,  
at least individual mixing blades (11.1 – 16.2) have a lifting edge (18) that is bent  
upwards on their trailing ends in the rotational direction.

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10. Mixing and reducing machine according to claim 8,  
characterized in that,  
mixing blades (11.1/2 to 16.1/2) arranged essentially one above the other are connected  
through a blade carrier (17) set in the rotational direction.

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11. Mixing and reducing machine according to claim 8,  
characterized in that,  
the mixing blades (11.1 – 16.2) are attached through carrier arms (20) onto a central shaft  
(8), the front surface (22) of which is chamfered, at least in sections, increasing radially to  
the outside

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12. Mixing and reducing machine according to claim 8,  
characterized in that,  
at least a few mixing blades (25) mesh on their outer side with catchment elements (24,  
26) that are located on a container wall (1).

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13. Mixing and reducing machine according to claim 12,  
characterized in that,  
the catchment elements are closed ring elements (24).

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14. Mixing and reducing machine according to claim 12,  
characterized in that,  
the catchment elements are toothed ring elements (26).

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15. Mixing and reducing machine according to claim 12,  
characterized in that,  
the catchment elements are arranged in segments over the circumference of the container.

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16. Mixing and reducing machine according to claim 1,  
characterized in that,  
on the end of the mixing blades, a shearing head (27) is arranged that is aligned with the  
vertical rotating axle (8).

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